



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,108	02/05/2004	Andy Yu	DKT 99097A (BWI-00082)	3939
7590	01/25/2006		EXAMINER HO, HA DINH	
Patent Docket Administrator Borgwarner Inc. Powertrain Technical Center Suite 100 3800 Automation Avenue Auburn Hills, MI 48326			ART UNIT 3681	PAPER NUMBER
DATE MAILED: 01/25/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/773,108	Applicant(s) YU ET AL.	
	Examiner Ha D. Ho	Art Unit 3681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 8-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 16-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/25/04 & 8/17/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This is the first Office Action on the merits of Application No. 10/773,108 filed on 02/05/04. Claims 1-20 are currently pending.

Election/Restrictions

2. Applicant's election with traverse of group I, claims 1-7 and 16-20, in the reply filed on 11/02/05 is acknowledged. The traversal is on the ground(s) that the subcombination (claim 8) is similar to the combination (claims 1-7 and 16-20) and they both include an input shaft, an output shaft, and a gear assembly that provides an underdrive gear ratio and a direct drive gear ratio or an overdrive gear ratio and a direct drive gear ratio. This is not found persuasive because the combination as recited in claim 8 does not require the particulars of the subcombination as recited in claims 1 and 16, for example, the direct clutch assembly, and a drum and band assembly. The subcombination as recited in claims 1 and 16 has separate utility such as it can be used in a vehicle without "a vehicle transmission" that is recited in the combination of claim 8 (see MPEP § 806.05(c)).

The requirement is still deemed proper and is therefore made FINAL.

3. Claims 8-15 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 11/02/05.

Specification

4. The disclosure is objected to because of the following informalities: page 10, line 8, "28 should be changed to --128--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 7, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Sherman (US 5,511,639).

Regarding claims 1 and 16, Sherman shows a transfer case/gear box assembly (see Fig. 1) comprising: an input shaft 44; an output shaft 62 selectively coupled to the input shaft; a planetary gear assembly 56 for transferring drive torque from the input shaft to the output shaft, said planetary gear assembly including a sun gear 54, a ring gear 58 and a plurality of pinion gears 64 mounted to a common carrier 60, said sun gear and said ring gear meshing with the plurality of pinion gears; a direct clutch assembly 14 including a first set of clutch plates 40 and a second set of clutch plates 46, wherein when the clutch assembly is activated, the first and second set of clutch plates are coupled together; and a drum and band assembly 12 including a drum 16 and a band 22, wherein the band is engaged to prevent the drum from rotating, and wherein the combination of the planetary gear assembly, the direct clutch assembly and the drum and band assembly provide an underdrive gear ratio and a direct drive gear ratio or an overdrive gear ratio and a direct drive gear ratio (col. 3, lines 4-5 and col. 4, lines 38-42).

Regarding claims 2 and 17, wherein the input shaft is coupled to the ring gear, the output shaft is coupled to the carrier and the sun gear is coupled to the first set of clutch plates and the drum, and wherein engaging the band couples the sun gear to ground 30 to provide the

Art Unit: 3681

underdrive gear ratio from the ring gear through the carrier to the output shaft, and wherein activating the clutch assembly couples the sun gear to the ring gear to provide the direct drive gear ratio from the input shaft to the output shaft.

Regarding claim 7, wherein the underdrive gear ratio or the overdrive gear ratio is selectively engaged automatically (via the transmission control 66).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3-5 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman (US 5,511,639) in view of Miyauchi et al (US 3,908,485).

Sherman does not specify the transfer case/gear box assembly having gear ratios as recited in claims 3-5 and 18-20. It is old and well known in the art that the gear ratio can be changed by changing the number of teeth of gear components of the planetary gear. The evidence is shown in the Miyauchi et al reference (see col. 9, lines 11-14).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to change the number of teeth of the gear components in the planetary gear of Sherman to have the gear ratios as recited since Examiner takes an Official Notice that the gear ratio can be changed by changing the number of teeth of gear components of the planetary gear is old and well known in the art (see Miyauchi et al reference, col. 9, lines 11-14).

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman (US 5,511,639) in view of Frost (US 6,612,959).

Sherman does not specify the transfer case providing a vehicle drive mode for all-wheel drive and two-wheel drive.

Frost shows a transfer case 22 providing a vehicle drive mode for all-wheel drive and two-wheel drive (see col. 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the transmission of Sherman to provide a vehicle drive mode for all-wheel drive and two-wheel drive as taught by Frost in order to make the transmission of Sherman useful for a particular vehicle, e.g., an all-wheel drive vehicle.

Cited Prior Art

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Breen'065, Koivunen'928, and Hayashi'028 which each shows a gearbox having a direct clutch, a brake and a planetary gear.

Communication

11. Submission of your response by facsimile transmission is encouraged. The fax phone numbers for the organization where this application or proceeding is assigned are **(571) 273-8300**. Recognizing the fact that reducing cycle time in the processing and examination of patent applications will effectively increase a patent's term, it is to your benefit to submit responses by facsimile transmission whenever permissible. Such submission will place the response directly in our examining group's hands and will eliminate Post Office processing and delivery time as well as the PTO's mail room processing and delivery time. For a complete list of correspondence not permitted by facsimile transmission, see M.P.E.P. 502.01. In general, most responses and/or amendments not requiring a fee, as well as those requiring a fee but charging such fee to a deposit account, can be submitted by facsimile transmission. Responses requiring a

Art Unit: 3681

fee which applicant is paying by check should not be submitting by facsimile transmission separately from the check. Responses submitted by facsimile transmission should include a Certificate of Transmission (M.P.E.P.. 512). The following is an example of the format the certification might take:

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office on _____

(Date)

Typed or printed name of person signing this certificate:

(Signature)

If your response is submitted by facsimile transmission, you are hereby reminded that the original should be retained as evidence of authenticity (37 CFR 1.4 and M.P.E.P.. 502.02). Please do not separately mail the original or another copy unless required by the Patent and Trademark Office. Submission of the original response or a follow-up copy of the response after your response has been transmitted by facsimile will only cause further unnecessary delays in the processing of your application; duplicate responses where fees are charged to a deposit account may result in those fees being charged twice.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ha D. Ho whose telephone number is **571-272-7091**. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor can be reached on **571-272-7095**.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HDH
(571) 272-7091
January 20, 2006


HAHO
PRIMARY EXAMINER

Art Unit 3681

1/20/06